METHOD AND SYSTEM FOR OUTPUTTING PRINTS

BACKGROUND OF THE INVENTION

The present invention relates to a print-outputting method and a print-outputting system, which make it possible to give a additive value to a print.

Conventionally, laboratories, etc. have conducted a print service for providing prints on which images, captured by the customer and exposed onto a silver-halide negative film, are printed. Further, corresponding to the rapid development of the digital still cameras associating with the improvement of digital technologies developed in recent years, laboratories, etc. have also conducted a print service for printing images based on the image data provided by the customer.

In the abovementioned field of service, a print service for providing postcards, such as New Year greeting cards,

etc., being photographic papers on which an image captured by the customer and letters of, for instance, "A Happy New Year" and associated images are printed, has been already put into practice. There has been a problem, however, that, as for the postcards provided by the above print service, the customer can only select one of readymade template images issued by the manufacturer.

On the other hand, the recent popularization of the digital printers has made it possible to provide a print service for freely synthesizing images with letters and illustrations designated by the customer to outputs desirable prints. However, the customer needs specialized software to modify the image data to be printed and a proficiency in its modification in a certain extent. Conversely, it has been difficult for a store, running a business of print service, to modify the image data corresponding to the demands of the customers, due to a limitation of its capability, namely, the actual situation of such a store is that it is possible to cope with a case of outputting tens of prints having the same image, such as name-cards with a portrait of the customer, but, it is not suitable to synthesize letters and illustrations being different one by one in each print.

In the abovementioned field of service, it may be possible to provide a print service for displaying

advertising messages and guiding information on a part of photographic paper, serving as an image-forming medium, on which images are printed, in order to obtain a part of the printing cost from a sponsor, being a subject of displaying the advertising messages and guiding information. In the abovementioned print service, it is a merit for the sponsor to widely advertise information of the products manufactured by the sponsor himself, while it is a merit for the customer to make the printing charge cheaper. Further, it is a merit for laboratories, etc. to increase profits by increasing a number of customers using the printing service.

In the abovementioned print service, although it is desirable that images based on image data captured by the customer and images based on additive information added by the sponsor are printed on the same photographic paper to improve advertising effects, it is a problem to determine a layout of arranging those images on the same photographic paper. Namely, the conventional L size of the prints is 89 mm x 127 mm. Accordingly, in order to produce the L size prints without any loss, either a roll photographic-paper having a width of 89 mm should be cut at every length of 127 mm or a roll photographic-paper having a width of 127 mm should be cut at every length of 89 mm.

        Accordingly, since, in the conventional print producing
method, all of the width of the roll photographic-paper is
fully utilized for printing images regardless of bordered or
borderless prints, it has been a problem that the size of the
captured image decreases when the images based on the
additive information are arranged in the width direction of
the photographic paper in parallel. To overcome the
abovementioned problem, it may be applicable to employ a
photographic paper having a larger width for forming the
images based on the additive information. However, this
would cause an increase of cost and arise another problem
that it is necessary to modify the image-forming apparatus.

        Further, it is quite natural that the sponsor, who
intends to print images for advertising purpose, wishes that
the images based on the additive information appeal to the
viewer of viewing images based on the captured image
information as stronger as possible. Therefore, it is an
important problem to determine a color and a layout of the
images based on the additive information. In addition, some
sponsors, in a certain field of business, wish to widely
distribute coupon tickets and/or discount tickets.

SUMMARY OF THE INVENTION

To overcome the abovementioned drawbacks in conventional image-forming apparatus, it is the first object of the present invention to provide a print-producing method and a print-outputting system, which make it possible to provide a print-service having a higher added value with simple operations, by printing enjoyable factors other than images captured by the customer on the prints.

Further, the second object of the present invention is to provide a printing system, a printing method and print-forming apparatus, which make it possible to effectively utilize image-forming media and to form images having a high appealing capability.

Accordingly, to overcome the cited shortcomings, the abovementioned objects of the present invention can be attained by methods described as follow.

(1) A method for producing a print, on which a specific image is printed based on a specific information set when a captured image is printed as a visible image on the print based on image data of the captured image, comprising the steps of: reading a plurality of specific information sets and a plurality of associate information sets, both of which are stored in a server, installed on a network, in such a manner that each of the specific information sets corresponds

to each of the associate information sets in regard to a date and time and for identifying or classifying the specific information sets; selecting a part of specific information sets out of a plurality of the specific information sets read from the server, based on the associate information sets; and printing the specific image, based on the specific information set, on the print on which the captured image is also printed.

(2) The method of item 1, wherein the specific information sets are transferred to a printer from the server and stored in a memory section provided in the printer.

(3) The method of item 1, wherein the reading step is performed at constant time intervals.

(4) The method of item 1, wherein the specific image is printed as a visible image on the print, based on the specific information set.

(5) The method of item 1, wherein, in the selecting step, a kind of the specific information set is selected corresponding to customer's information accumulated in advance in either the printer or the network.

(6) A method for producing a print, on which a specific image is printed based on a specific information set when an image captured by a customer is printed as a visible image on the print based on image data of the image captured by the

customer in a shop running a business of producing the print,

comprising the steps of: extracting the specific information

set from a memory section, in which a plurality of specific

information sets are stored, irrespective of the image

captured by the customer; and printing the specific image,

based on the specific information set extracted in the

extracting step, on the print on which the image captured by

the customer is also printed, wherein specific images printed

on consecutive prints are different relative to each other.

(7) The method of item 6, wherein a plurality of the specific

information sets are stored in the memory section in such a

manner that a priority degree or an order of each of the

specific information sets is determined in advance.

(8) The method of item 6, wherein the memory section is

provided in a server installed on a network.

(9) The method of item 6, wherein the specific image is

printed as a visible image on the print, based on the

specific information set.

(10) The method of item 6, wherein, the specific information

set is extracted corresponding to customer's information

accumulated in advance.

(11) A method for producing a print, on which a specific

image is printed based on a specific information set when an

image captured by a customer is printed as a visible image on

the print based on image data of the image captured by the

customer in a shop running a business of producing the print,

comprising the steps of: generating a random number;

extracting the specific information set from a memory

section, in which a plurality of specific information sets

are stored, based on the random number and irrespective of

the image captured by the customer; and printing the specific

image, based on the specific information set extracted in the

extracting step, on the print on which the image captured by

the customer is also printed, wherein specific images printed

on consecutive prints are different relative to each other.

(12) The method of item 11, wherein the random number is

generated in the memory section.

(13) The method of item 11, wherein the specific image is

printed as a visible image on the print, based on the

specific information set.

(14) The method of item 11, wherein a kind of the specific

information sets is selected corresponding to customer's

information accumulated in advance.

Further, to overcome the abovementioned problems, other

print-outputting methods and print-outputting systems,

embodied in the present invention, will be described as

follow:

(15) A print-outputting method, characterized in that,

the print-outputting method, in which a print is outputted after writing a specific information on the print when image data of a captured subject are print-outputted as a visible image on a print, comprises the steps of:

storing at least associate information, in regard to a date and time and for identifying or classifying specific information, into a server, corresponding to the specific information;

reading a plurality of specific information and a plurality of associate information, stored in the server by means of a computer coupled to a printer;

selecting a part of the specific information out of a plurality of the specific information read from the server, based on the associate information; and

writing the specific information on the same print as that of captured image.

(16) A print-outputting method, characterized in that,

the print-outputting method, in which a print is outputted after writing a specific information on the print when image data of a captured subject are print-outputted as a visible image on a print in a shop running a print-outputting business of captured images, comprises the steps of:

storing a plurality of information in a computer in advance in such a manner that a priority degree or an order of each of the specific information is determined in advance;

extracting the specific information irrespective of the captured image of a customer based on the priority degree or the order; and

writing the specific information, which are different relative to each other on consecutive prints, on the same print as that of captured image.

(17) A print-outputting method, characterized in that,

the print-outputting method, in which a print is outputted after writing a specific information on the print when image data of a captured subject are print-outputted as a visible image on a print in a shop running a print-outputting business of captured images, comprises the steps of:

storing a plurality of information in a computer in advance;

extracting the specific information irrespective of the captured image of a customer by generating a random number in the computer;

writing the specific information, which are different relative to each other on consecutive prints, on the same print as that of captured image.

(18) A print-outputting system, characterized in that,

the print-outputting system, in which a print is outputted after writing a specific information on the print when image data of a captured subject are print-outputted as a visible image on a print, comprises:

a server to store at least associate information, in regard to a date and time and for identifying or classifying specific information, corresponding to the specific information;

a terminal device, comprising

an inputting device, coupled to the server through a network, to select a kind of the specific information, and

a selecting device to select the specific information stored in the server, based on the information inputted by the inputting device and referring to the associate information; and

a writing device to write the specific information on the same print as that of captured image.

(19) A print-outputting system, characterized in that,

the print-outputting system, in which a print is outputted after writing a specific information on the print when image data of a captured subject are print-outputted as a visible image on a print, comprises:

a memory device to store a plurality of information corresponding to a priority degree or an order of each of the specific information;

an extracting device to automatically extract the specific information irrespective of the captured image of a customer based on the priority degree or the order; and

a writing device to write the specific information, which are different relative to each other on consecutive prints, on the same print as that of the captured image.

(20) A print-outputting system, characterized in that,

the print-outputting system, in which a print is outputted after writing a specific information on the print when image data of a captured subject are print-outputted as a visible image on a print, comprises:

a memory device to store a plurality of the specific information;

an extracting device to automatically extract the specific information, which are different relative to each other on consecutive prints, irrespective of the captured image of a customer by generating a random number in the computer;

a writing device to write the specific information, which are different relative to each other on consecutive prints, on the same print as that of captured image.

The print-outputting method of item 15, in which a print is outputted after writing a specific information on the print when image data of a captured subject are print-outputted as a visible image on a print, comprises the steps of: storing at least associate information, in regard to a date and time and for identifying or classifying specific information, into a server, corresponding to the specific information; reading a plurality of specific information and a plurality of associate information, stored in the server by means of a computer coupled to a printer; selecting a part of the specific information out of a plurality of the specific information read from the server, based on the associate information; and writing the specific information on the same print as that of captured image.

According to the print-outputting method of item 15, it is possible that a plurality of specific information are stored in the server in advance, and the specific information are read into the computer installed in the printer through the network (including Internet), and an arbitral information selected out of a plurality of obtained information are written onto the print, when printing a photographic image. At this time, it is desirable that at least associate information, in regard to a date and time and for identifying or classifying specific information, are stored into the

server, corresponding to the specific information, and the

specific information are read with the associate information

when reading them into the computer of the printer side, and

the associate information are extracted for selecting

information to be written on the print. The associate

information in regard to its date and time may be utilized as

an indicator of information newness, and the associate

information for identifying or classifying purpose can be

utilized for selecting the information from the customer's

favorite field. It is a merit of supplying specific

information through the network that a larger amount of

information can be delivered to a plurality of stores. In a

mode that each of the stores accesses an information-storing

site provided in the server by the dealer, it is possible for

each of the stores to automatically obtain a lot of

information without making efforts for collecting information

by themselves. It is desirable that the information-

providing dealer revises the information stored in the server

at every predetermined period of time so that each of stores

can record the newest daily information onto the prints by

accessing the information-storing site every day to store the

information in the computer of the store. Incidentally, the

term of "the computer coupled to the printer" includes a

meaning of "a computer incorporated in the printer".

The print-outputting method of item 16, in which a print is outputted after writing a specific information on the print when image data of a captured subject are print-outputted as a visible image on a print in a shop running a print-outputting business of captured images, comprises the steps of: storing a plurality of information in a computer in advance in such a manner that a priority degree or an order of each of the specific information is determined in advance; extracting the specific information irrespective of the captured image of a customer based on the priority degree or the order; and writing the specific information, which are different relative to each other on consecutive prints, on the same print as that of captured image.

According to the print-outputting method of item 16, since a plurality of information are stored in a computer in such a manner that a priority degree or an order of each of the specific information is determined in advance and the information are written on the print based on the priority degree or the order, it is possible to write the information in a favorite order. When reading the specific information through the network, it is possible to set the priority degree or the order in the server storing the specific information in advance, or it is also possible to set them after reading the information into the computer of the

printer from the server. When a customer orders a plurality

of prints, since it is possible to write information into the

prints in accordance with the priority degree or the order so

that different information are written onto the consecutive

prints, it becomes desirably possible to provide a wide range

of information, especially in case that the specific

information are advertising information, etc. Incidentally,

the store, running a print-outputting business of captured

images, indicates, for instance, a shop like a photographic

laboratory.

As an example of determining such the priority or the

order, a case, in which twenty specific information are

printed, will be detailed in the following. For this

purpose, either method (M1) for one-directionally selecting

information without identifying a pause of the customers, or

method (M2) for selecting information by returning the

information to the priority 1 at every pause of the customer,

can be arbitrarily selected. Now, assuming that customer A

orders eight prints, customer B orders six prints, customer C

orders eight prints and customer D orders six prints, each of

customers A, B, C, D receives finished prints on which the

specific information as shown in the following numbers are

printed.

(M1)	customer A	1	2	3	4	5	6	7	8
	customer B	9	10	11	12	13	14		
	customer C	15	16	17	18	19	20	1	2
	customer D	3	4	5	6	7	8		
(M2)	customer A	1	2	3	4	5	6	7	8
	customer B	1	2	3	4	5	6		
	customer C	1	2	3	4	5	6	7	8
	customer D	1	2	3	4	5	6		

According to method (M1), it becomes effectively possible to thoroughly print all of the specific information, while according to method (M2), there is a merit that the frequency of printing the specific information having the high priority of the high order will be raised. Accordingly, when the specific information is advertisements etc., the higher the priority or the order of the specific information, the higher the appealing capability of them can be raised. Accordingly, it becomes possible to collect a lager amount of advertising fees.

Incidentally, when determining the priority degree or the order, although it is applicable that the operator manually inputs the priority degree, etc., it is also possible that the priority degrees, etc. are automatically determined, for instance, corresponding to fluctuation in

advertising fees, by performing a predetermined program in the computer.

The print-outputting method of item 17, in which a print is outputted after writing a specific information on the print when image data of a captured subject are print-outputted as a visible image on a print in a shop running a print-outputting business of captured images, comprises the steps of: storing a plurality of information in a computer in advance; extracting the specific information irrespective of the captured image of a customer by generating a random number in the computer; writing the specific information, which are different relative to each other on consecutive prints, on the same print as that of captured image.

According to the print-outputting method of item 17, a plurality of specific information, such as advertisements, etc., are stored in the computer in advance, and, when a customer orders a plurality of prints, it is possible to unintentionally write information on the prints, by automatically extracting the information irrespective of the captured image of a customer based on the random number generated in the computer so that advertisements, being different each other, are recorded onto the consecutive prints. Alternatively, it is also possible to write information on the prints by unintentionally extracting the

information in order of the recognizing order (for instance,

a numerical order, an alphabetical order, etc.) of the

computer based on the unintentional associate information,

which is added to the specific information, when the specific

information are stored in the computer.

To select the specific kind of information

corresponding to the customer's taste, it is desirable that

information of the customer, including sex, age, interests,

etc., are investigated and stored in advance by hearing from

the customer, so as to reflect such information onto the

operation for selecting the specific kind of information to

be recorded on the prints. Further, it is also possible that

information, in respect to the kind of images captured by the

customer, are accumulated in advance, so as to reflect such

information onto the operation for selecting the specific

kind of information to be recorded on the prints.

Further, it is desirable that the specific information

to be written on the prints are visible information.

Still further, it is desirable that the kind of the

specific information to be written on the prints is selected

corresponding to customer's information accumulated in

advance.

The print-outputting system of item 18, characterized

in that the print-outputting system, in which a print is

outputted after writing a specific information on the print

when image data of a captured subject are print-outputted as

a visible image on a print, comprises: a server to store at

least associate information, in regard to a date and time and

for identifying or classifying specific information,

corresponding to the specific information; a terminal device,

comprising an inputting device, coupled to the server through

a network, to select a kind of the specific information, and

a selecting device to select the specific information stored

in the server, based on the information inputted by the

inputting device and referring to the associate information;

and a writing device to write the specific information on the

same print as that of captured image.

According to the print-outputting system of item 18, a

plurality of specific information are stored in the server in

advance, and it is possible to write the information on the

prints when printing photographic images, by reading the

specific information into the terminal device through the

network (including an Internet) and by selecting arbitral

information out of a plurality of information obtained. At

this time, at least associate information, in regard to a

date and time and for identifying or classifying specific

information are stored in the server corresponding to the

specific information, and, when reading into the terminal

device, the specific information are read with the associate

information, and it is desirable that the associate

information is extracted for selecting the information to be

written on the prints. The associate information in regard

to its date and time may be utilized as an indicator of

information newness, and the associate information for

identifying or classifying purpose can be utilized for

selecting the information from the customer's favorite field.

It is a merit of supplying specific information through the

network that a larger amount of information can be delivered

to a plurality of stores. In a mode that each of the stores

accesses an information-storing site provided in the server

by the dealer, it is possible for each of the stores to

automatically obtain a lot of information without making

efforts for collecting information by themselves. It is

desirable that the information-providing dealer revises the

information stored in the server at every predetermined

period of time so that each of stores can record the newest

daily information onto the prints by accessing the

information-storing site every day to store the information

in the computer of the store.

The print-outputting system of item 19, characterized

in that the print-outputting system, in which a print is

outputted after writing a specific information on the print

when image data of a captured subject are print-outputted as a visible image on a print, comprises: a memory device to store a plurality of information corresponding to a priority degree or an order of each of the specific information; an extracting device to automatically extract the specific information irrespective of the captured image of a customer based on the priority degree or the order; and a writing device to write the specific information, which are different relative to each other on consecutive prints, on the same print as that of the captured image.

According to the print-outputting system of item 19, since a plurality of information are stored in a computer in such a manner that a priority degree or an order of each of the specific information is determined in advance and the information are written on the print based on the priority degree or the order, it is possible to write the information in a favorite order. When reading the specific information through the network, it is possible to set the priority degree or the order in the server storing the specific information in advance, or it is also possible to set them after reading the information into the terminal device from the server. When a customer orders a plurality of prints, since it is possible to write information into the prints in accordance with the priority degree or the order so that

different information are written onto the consecutive

prints, it becomes desirably possible to provide a wide range

of information, especially in case that the specific

information are advertising information, etc.

The print-outputting system of item 20, characterized

in that the print-outputting system, in which a print is

outputted after writing a specific information on the print

when image data of a captured subject are print-outputted as

a visible image on a print, comprises: a memory device to

store a plurality of the specific information; an extracting

device to automatically extract the specific information,

which are different relative to each other on consecutive

prints, irrespective of the captured image of a customer by

generating a random number in the computer; a writing device

to write the specific information, which are different

relative to each other on consecutive prints, on the same

print as that of captured image.

According to the print-outputting system of item 20, a

plurality of specific information, such as advertisements,

etc., are stored in the computer in advance, and, when a

customer orders a plurality of prints, it is possible to

unintentionally write information on the prints, by

automatically extracting the information irrespective of the

captured image of a customer based on the random number

generated in the computer so that advertisements, being

different each other, are recorded onto the consecutive

prints. Alternatively, it is also possible to write

information on the prints by unintentionally extracting the

information in order of the recognizing order (for instance,

a numerical order, an alphabetical order, etc.) of the

computer based on the unintentional associate information,

which is added to the specific information, when the specific

information are stored in the computer.

Further, it is desirable that the print-outputting

system of item 20 further comprises a writing device for

visibly writing the specific information on the prints.

Still further, it is desirable that the print-

outputting system of item 20 further comprises a memory

device for classifying and accumulating customer's

information; and a selecting device for selecting the kind of

the specific information to be written on the prints

corresponding to the customer's information accumulated by

the memory device.

Incidentally, news, weather forecasts, ranking

information, good seller information, event information,

sightseeing guide information, new product information,

recruiting information, advertisements, coupon tickets,

lottery tickets, fortune-telling information, illustrations,

etc. can be cited as the specific information to be formed on the prints. Although the abovementioned information could be either a visible information such as a row of letters, a table, etc. or invisible information requiring a specific reading apparatus to read it, it is more desirable that the abovementioned information are visible information.

Further, it is possible to arbitrarily set the writing position of the specific information at an upper, a lower, a left or a right position of the captured image, or by overlapping with the captured image.

(21) A printing system, characterized in that,

the printing system, for forming an image, based on captured image information and specific information, on anyone of a plurality of image-forming media having different widths and a long-extension in a longitudinal direction in respect to an axial direction, comprises:

a detector to detect a width of the image-forming medium, on which the image is formed;

an obtaining device to obtain a size of the image to be formed; and

a determining device to determine at least one of a size, a shape and a forming position of the image based on the specific information in respect to the image based on the captured image information, based on the width detected by

the detector and the size of the image obtained by the
obtaining device.

(22) A printing system, characterized in that,

the printing system, for forming an image, based on
captured image information and specific information, on the
same image-forming medium, comprises:

a detector to detect a top and bottom direction of the
image to be formed based on the captured image information;
and

a determining device to determine a direction of the
image to be formed based on the specific information so as to
correspond to a top and bottom direction of the image to be
formed based on the captured image information.

(23) A printing system, characterized in that,

the printing system, for forming an image, based on
captured image information and specific information, on the
same image-forming medium, comprises:

a detector to detect a background color of the image to
be formed based on the captured image information; and

a determining device to determine a background color of
the image to be formed based on the specific information,
corresponding to the background color detected by the
detector.

(24) A printing system, characterized in that,

the printing system, for forming an image, based on captured image information and specific information, on the same image-forming medium, comprises:

a detector to detect a color of the image to be formed based on the captured image information and being located near the image based on the specific information; and

a determining device to determine a background color of the image to be formed based on the specific information, corresponding to the color of the image detected by the detector.

(25) A printing method, characterized in that,

the printing method, for forming an image, based on captured image information and specific information, on anyone of a plurality of image-forming media having different widths and a long-extension in a longitudinal direction in respect to an axial direction, comprises the step of:

disposing the image based on the specific information at a position between images, based on the captured image information, aligned in the longitudinal direction of the image-forming medium.

(26) A printing method, characterized in that,

the printing method, for forming an image, based on captured image information and specific information, on the same image-forming medium, comprises the steps of:

detecting a top and bottom direction of the image to be
formed based on the captured image information; and

a determining a direction of the image to be formed
based on the specific information so as to correspond to a
top and bottom direction of the image to be formed based on
the captured image information.

(27) A printing method, characterized in that,

the printing method, for forming an image, based on
captured image information and specific information, on the
same image-forming medium, comprises the steps of:

detecting a background color of the image to be formed
based on the captured image information; and

a determining a background color of the image to be
formed based on the specific information, corresponding to
the background color detected in the detecting step.

(28) A printing method, characterized in that,

the printing method, for forming an image, based on
captured image information and specific information, on the
same image-forming medium, comprises the steps of:

detecting a color of the image to be formed based on
the captured image information and being located near the
image based on the specific information; and

a determining a background color of the image to be

formed based on the specific information, corresponding to

the color of the image detected in the detecting step.

(29) A image-forming medium, characterized in that,

in the image-forming medium on which an image based on

captured image information and specific information can be

formed,

at least a part of an area, at which the image based on

the specific information is formed, can be separated from an

area of the image based on the captured image information

without using a cutting device.

According to the printing system of item 21, since the

printing system, for forming an image, based on captured

image information and specific information, on anyone of a

plurality of image-forming media having different widths and

a long-extension in a longitudinal direction in respect to an

axial direction, comprises: a detector to detect a width of

the image-forming medium, on which the image is formed; an

obtaining device to obtain a size of the image to be formed;

and a determining device to determine a layout of the image

based on the captured image information and the image based

on the specific information, based on the width detected by

the detector and the size of the image obtained by the

obtaining device, it becomes possible to effectively arrange

the image based on the captured image information and the
image based on the specific information within a limited
space on the image-forming medium, and thereby, it is
possible to suppress a using amount of the image-forming
medium in a minimum level. Incidentally, although it is
possible that the obtaining device obtains the size of the
image to be formed, for instance, based on the information
inputted by the operator in respect to the size, the scope of
the obtaining mode is not limited to this example.

For instance, when the width of the image-forming
medium detected by the detector is substantially equal to the
image size, in a vertical or a lateral direction, obtained by
the obtaining device, the determining device make the image
size, in a vertical or a lateral direction, to be formed
based on the captured image information coincide with the
width of the image-forming medium, and the determining device
determines at least one of a size, a shape and a forming
position of the image so that the image to be formed based on
the specific information aligns in a longitudinal direction
of the image-forming medium, and thereby, it is no need to
minimize the image to be formed based on the captured image
information, even if the image-forming medium having the same
width dimension as that of conventional one, and further, it

becomes desirably possible to use the image-forming medium without any losses.

According to the printing system of item 22, since the printing system, for forming an image, based on captured image information and specific information, on the same image-forming medium, comprises: a detector to detect a top and bottom direction of the image to be formed based on the captured image information; and a determining device to determine a direction of the image to be formed based on the specific information so as to correspond to a top and bottom direction of the image to be formed based on the captured image information, for instance, when a customer views the image based on the captured image information, the customer can naturally recognize the image based on the specific information, the top and bottom direction of which coincides with that of image based on the captured image information. Thus, the appealing capability of images in regard to the specific information will be improved higher than ever.

Namely, when an image having top and bottom direction (for instance, such as a human face, etc) is included in the image to be formed based on the specific information, although it is desirable that the determining device determines the direction of the image so that the top and bottom direction of the image detected by the detector

coincides with top and bottom direction of the image to be
formed based on the specific information, it is not necessary
to do so every time. This is because, sometimes, the
appealing capability of the image would be increased by
conversely arranging the top and bottom direction of the
image.

Further, when one or a plurality of letters is/are
included in the image to be formed based on the specific
information, the viewer of the image can easily read the
letters, since the determining device determines the
direction of the image so that the top and bottom direction
of the image detected by the detector coincides with the top
and bottom direction of each letter.

Still further, in case that a row of letters is
included in the image to be formed based on the specific
information, the viewer of the image can easily read the
letters, since the determining device arranges the leading
edge of the row at the left end, when the letters are written
vertically, while, the determining device arranges the
leading edge of the row at the upper side, when the letters
are written laterally.

According to the printing system of item 23, since the
printing system, for forming an image, based on captured
image information and specific information, on the same

image-forming medium, comprises: a detector to detect a
background color of the image to be formed based on the
captured image information; and a determining device to
determine a background color of the image to be formed based
on the specific information, corresponding to the background
color detected by the detector, it is possible to enforce an
appealing capability of the image to be formed based on the
specific information by appropriately determining the
background color.

According to the printing system of item 24, since the
printing system, for forming an image, based on captured
image information and specific information, on the same
image-forming medium, comprises: a detector to detect a color
of the image to be formed based on the captured image
information and being located near the image based on the
specific information; and a determining device to determine a
background color of the image to be formed based on the
specific information, corresponding to the color of the image
detected by the detector, it is possible to enforce an
appealing capability of the image to be formed based on the
specific information by appropriately determining the
background color.

Desirably, when the background color, determined by the
determining device, is selected as a complementary color of

the color detected by the detector or a color having a
completely different reflection spectrum, it is possible to
strongly enforce an appealing capability of the image based
on the specific information, while, when the background
color, determined by the determining device, is similar to
the color detected by the detector, for instance, a color
having a similar reflection spectrum, the image based on the
specific information would appeal to the viewer with a
natural feeling.

According to the printing method of item 25, since the
printing method, for forming an image, based on captured
image information and specific information, on anyone of a
plurality of image-forming media having different widths and
a long-extension in a longitudinal direction in respect to an
axial direction, comprises the step of: disposing the image
based on the specific information at a position between
images, based on the captured image information, aligned in
the longitudinal direction of the image-forming medium, it
becomes possible to effectively arrange the image based on
the captured image information and the image based on the
specific information within a limited space on the image-
forming medium, and thereby, it is possible to suppress a
using amount of the image-forming medium in a minimum level.

According to the printing method of item 26, since the
printing method, for forming an image, based on captured
image information and specific information, on the same
image-forming medium, comprises the steps of: detecting a top
and bottom direction of the image to be formed based on the
captured image information; and a determining a direction of
the image to be formed based on the specific information so
as to correspond to a top and bottom direction of the image
to be formed based on the captured image information, for
instance, when a customer views the image based on the
captured image information, the customer can naturally
recognize the image based on the specific information, the
top and bottom direction of which coincides with that of
image based on the captured image information. Thus, the
appealing capability of images in regard to the specific
information will be improved higher than ever.

According to the printing method of item 27, since the
printing method, for forming an image, based on captured
image information and specific information, on the same
image-forming medium, comprises the steps of: detecting a
background color of the image to be formed based on the
captured image information; and a determining a background
color of the image to be formed based on the specific
information, corresponding to the background color detected

in the detecting step, it is possible to enforce an appealing

capability of the image to be formed based on the specific

information by appropriately determining the background

color.

According to the printing method of item 28, since the

printing method, for forming an image, based on captured

image information and specific information, on the same

image-forming medium, comprises the steps of: detecting a

color of the image to be formed based on the captured image

information and being located near the image based on the

specific information; and a determining a background color of

the image to be formed based on the specific information,

corresponding to the color of the image detected in the

detecting step, it is possible to enforce an appealing

capability of the image to be formed based on the specific

information by appropriately determining the background

color.

According to the image-forming medium of item 29,

since, in the image-forming medium on which an image based on

captured image information and specific information can be

formed, at least a part of an area, at which the image based

on the specific information is formed, can be separated from

an area of the image based on the captured image information

without using a cutting device, for instance, when discount

tickets or coupon tickets are formed as the image based on the specific information, it is conveniently possible for the customer to use them by easily cutting off only them from the photographic paper.

The term of "specific information", defined in the present invention, does not indicate the information for a lettering-print or a greeting card print, for which a customer designates an image layout and/or a row of letters in advance, but indicates fresh information and/or advertisements, which are initially viewed by the customer when he receives prints. Such the fresh information and/or advertisements include information suggested by the image or information in regard to the customer's interested item.

With respect to a detection of "top and bottom direction", it is possible to automatically determine based on the information included in the image, for instance, a human face, or it is also possible to determine based on information in respect to a top and bottom direction inputted by the operator, who views the image to determine its direction.

It is desirable that the term of "background color" indicates a color derived from an average density of a part other than the main subject, for instance, in respect to colors of mountains and the sky residing in the background of

the human body. Further, when the main subject occupies

almost of all area of the image, for instance, when taking a

close-up photo of the human face, it is desirable that the

"background color" is determined at a color derived by the

abovementioned method in respect to all of the image

information.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects and advantages of the present invention

will become apparent upon reading the following detailed

description and upon reference to the drawings in which:

Fig. 1 shows a conceptual view of a print-outputting

system embodied in the present invention;

Fig. 2 shows a block-diagram of a configuration of a

print-outputting apparatus;

Fig. 3(a), Fig. 3(b), Fig. 3(c), Fig. 3(d) and Fig.

3(e) show explanatory illustrations for explaining printing

operations of a print-outputting apparatus;

Fig. 4 shows a perspective view of a photographic

paper, being an example of image forming media printed by a

print-outputting apparatus;

Fig. 5 shows a conceptual block-diagram of EMBODIMENT

3;

Fig. 6 shows a block diagram of a configuration of a mini-lab (a print-service system);

Fig. 7(a) and Fig. 7(b) show printing formats of a print;

Fig. 8 shows an exemplified table displayed on the screen of a displaying section at the time of the print-order; and

Fig. 9 shows a block diagram of a network system, being another example of EMBODIMENT 3.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[EMBODIMENT 1]

Referring to EMBODIMENT 1, the present invention will be detailed in the following.

Fig. 1 shows a conceptual view of a print-outputting system embodied in the present invention. In Fig. 1, print-outputting apparatus 20, serving as a printer having a function of a terminal device coupled to the network, and server 30 constitute the print-outputting system. Although print-outputting apparatus 20, which produces prints by exposing/developing images onto a photosensitive material and is desirably installed in the laboratories, etc., is exemplified in Fig. 1, it is also possible to employ other type of print-outputting apparatus, which can produce prints

based on image information, such as, for instance, an ink-jet printer or an electro-photographic printer. Specifically, a print-outputting apparatus utilizing a roll-type image-forming medium is desirably employed.

Print-outputting apparatus 20, embodied in the present invention, incorporates magazine-loading section 203 mounted on the left side of main body 202. Exposure processing section 204 for exposing images on a roll-type photosensitive material (a photographic paper), serving as an image-forming medium, and development processing section 205 for producing the prints by developing the exposed photosensitive materials and drying them are provided in main body 202. The finished prints are delivered to delivery tray 206 mounted on the right side of main body 202. In addition, control section 207 is also incorporated in main body 202, and located at the upper portion of exposure processing section 204. Incidentally, magazine-loading section 203 capable of loading a plurality of photosensitive materials, widths of which are different relative to each other, can transmit a signal, corresponding to the type (width, size, etc.) of the roll-type photosensitive material currently loaded, to control section 207. Incidentally, control section 207 constitutes means for selecting and automatically extracting.

Further, CRT 208 is mounted on the top of main body 202 and constitutes a display means for displaying an image of prints to be produced based on image data. Film scanner section 209 which reads image data of a transparent original film, and reflection-type original image inputting apparatus 210 which reads image data of a reflective original sheet, are disposed at a left side and a right side of CRT 208, respectively.

The photosensitive materials, serving as a document, which can be read by film scanner section 209 and reflection-type original image inputting apparatus 210, includes a color negative film, a color reversal film, a black and white negative film, a black and white reversal film, etc., and image data captured by an analogue camera are memorized. Images recorded on the film can be converted to the image data by the film scanner of film scanner section 209. Further, images recorded on the color paper, being one of photosensitive materials, can be converted to the image data by the flat-bed scanner of reflection-type original image inputting apparatus 210.

Further, image-transferring section 214 is installed at a position of control section 207 in main body 202. Other than the aforementioned removable media M (PC card), IC card 213a, floppy disk 213b, etc. can be inserted into image-

transferring section 214, which reads the image data, etc. from the recording medium currently inserted.

Operating section 211 is disposed in front of CRT 208, and information-inputting device 212, which comprises, for instance, a touch panel, etc., is arranged at operating section 211.

Further, memory-media writing section 215 is installed in main body 202, and writing device K (in Fig. 2), which writes the image data stored in memory-media onto magnetic memory media, optical memory media, etc., is further installed.

Concretely speaking, removable media, including a multi-media card, a memory stick, MD, CD-ROM, etc., can be cited as memory media for memorizing the image data. However, the memory media are not limited to the abovementioned removable media.

Incidentally, although operating section 211, CRT 208, film scanner section 209, reflection-type original image inputting apparatus 210, image-transferring section 214 and memory-media writing section 215 are integrally equipped with main body 202 to form an integrated apparatus in the abovementioned configuration, it is also applicable that one of them or more is/are provided separately from the integrated apparatus.

Fig. 2 shows a block-diagram of a configuration of print-outputting apparatus 20.

Control section 207 of print-outputting apparatus 20 reads information of the document from film scanner section 209 and reflection-type original image inputting apparatus 210 based on command information sent from information-inputting device 212 to obtain image data, and displays on CRT 208.

Further, print-outputting apparatus 20 comprises data-accumulating section 271 and specific information memorizing section 272. The image data read from removable media M and print-order information (detailed later) corresponding to the image data can be stored and sequentially accumulated into data-accumulating section 271. Frame images of developed negative film N, obtained by developing a negative film on which images captured by an analogue camera are exposed, are inputted from film scanner section 209, and a frame image of print P, obtained by printing frame images onto photographic papers, is inputted from reflection-type original image inputting apparatus 210.

Specific information memorizing section 272 memorizes at least one of image data for setting a background image and a synthesizing region, and reads the specific information corresponding to the image data from server 30 to store it.

One of specific information is selected from a plurality of
specific information sets stored in specific information
memorizing section 272 in a mode described later, and the
image data are synthesized with the selected specific
information to produce a print based on the synthesized image
data. Although the specific information memorizing section
is installed in print-outputting apparatus 20 in the above
case, it is applicable that the specific information
memorizing section is installed in another computer being
independent from the print-outputting apparatus, while the
synthesized image data is sent to the print-outputting
apparatus to produce prints based on the synthesized image
data.

As for a memorizing operation of the specific
information, it is possible to read the specific information
stored in server 30 from communication device 240 by
accessing to server 30 through network N, such as the
internet, etc., and it is also applicable that a plurality of
specific information sets are downloaded into specific
information memorizing section 272 in advance, or only
desired specific information are downloaded to produce prints
after the synthesizing operation at the time of printing.

Further, control section 207 comprises image processor
270, in which image data utilized for the exposing process

are generated by processing the inputted image data, and are

transmitted to exposure processing section 204 wherein the

images are exposed on photosensitive materials. The exposed

photosensitive materials are sent to print-producing section

205 to produce the prints through the processes of developing

and then drying them.

Image reading device 230, for reading and transferring

the image data stored in removable media M, and communication

device 240, capable of communicating with server 30, are

installed in image transferring section 214 of print-

outputting apparatus 20. Image reading device 230 can reads

the image data stored in removable media M currently inserted

into image transferring section 214 and can transfer the

image data to control section 207 including a micro-computer.

On the other hand, communication device 240 can input the

image data, etc. by communicating with server 30 through

network N.

Next, referring to Fig. 3(a) and Fig. 3(b), printing

operations of print-outputting apparatus 20, embodied in the

present invention, will be detailed in the following. Fig.

3(a) and Fig. 3(b) show an explanatory illustration for

explaining printing operations of print-outputting apparatus

20. Incidentally, print-outputting apparatus 20 can perform

the following printing operations based on the program stored in the in-house hard-disk, serving as a memory medium.

Initially, it is assumed that a plurality of specific information sets are stored in server 30, in such a manner that each of specific information sets corresponds to its associate information in regard to its date and time and for identifying or classifying them. When the operator inputs reference information, including sex/age of the customer, etc., from information-inputting device 212, control section 207 (computer) of print-outputting apparatus 20 accesses server 30 through communication device 240 to automatically extract specific information, in which the customer may be interested, from specific information sets stored in server 30 based on the reference information inputted by the operator, and downloads the extracted specific information with the associate information.

Since the downloaded specific information sets are displayed on the screen of CRT 208, it is possible to select the suitable specific information to be attached to the prints based on the associate information. Incidentally, the associate information in regard to its date and time may be utilized as an indicator of information newness, and the associate information for identifying or classifying purpose can be utilized for selecting the information from the

customer's favorite field. Accordingly, for instance, when
the customer is a young lady, since it may be possible that
she would be interested in a horoscopy or a like, the
associate information with respect to the horoscopy of this
week would be retrieved from server 30 to form image G2
located at a side area of image G1 on photographic paper P as
shown in Fig. 3(a). Thus, it is possible to provide a print
on which both image G1 and image G2 are printed.

On the other hand, for instance, when the customer is a
young office worker, since it may be possible that he would
be interested in an information-processing apparatus
including a personal computer or a like, the associate
information, with respect to a fully discounted personal
computer, etc., would be retrieved from server 30 to form
image G2' located at a side area of image G1' on photographic
paper P as shown in Fig. 3(a). Thus, it is possible to
provide a print on which both image G1' and image G2' are
printed. Although the operator can perform the
abovementioned selecting operation, it is desirable that
control section 207 automatically conducts the selecting
operation of this kind.

Accordingly, to select the specific kind of information
corresponding to the customer's taste, it is desirable that
information of the customer, including sex, age, interests,

etc., are investigated and stored in advance by hearing from
the customer, so as to reflect such information onto the
operation for selecting the specific kind of information to
be recorded on the prints. Further, it is also possible that
information, in respect to the kind of images captured by the
customer, are accumulated in advance, so as to reflect such
information onto the operation for selecting the specific
kind of information to be recorded on the prints.

Further, in a mode that each of laboratories accesses
an information-storing site provided in server 30 by the
dealer, it is possible for the laboratories to automatically
obtain a lot of information without making efforts for
collecting information by themselves. It is desirable that
the information-providing dealer revises the information
stored in server 30 at every predetermined period of time so
that each of laboratories can record the newest daily
information onto the prints by accessing the information-
storing site provided server 30 every day to store the
information in print-outputting apparatus 20.

Further, as a modified example of the EMBODIMENT 1, it
may be applicable that advertising information sets, serving
as a plurality of specific information sets, are stored in
specific information memorizing section 272 in such a manner
that the priority degree or the order of each of the

advertising information sets is determined in advance. In

this case, since the advertising information is recorded on

the prints according to its priority degree or its order, it

is possible to record the information on the prints in the

favorite order. It is also applicable that the advertising

information sets, to each of which the abovementioned

priority degree or the order is already attached, are stored

in server 30 in advance. In this case, it is possible to

read them through network N. Alternatively, it is also

applicable that only the advertising information sets are

stored in server 30 in advance, and the abovementioned

priority degree is attached after the advertising information

is read into print-outputting apparatus 20 from server 30.

   According to the modified example mentioned above, when

a customer orders a plurality of prints, it is possible to

record different advertising information sets onto the

consecutive prints, for instance, advertisement G2 of "PATENT

OFFICE" is attached to image G1 of the first print, while

advertisement G2' of "INVENTIVE COMPANY" is attached to image

G1' of the second print, as shown in Fig. 3(b). Therefore,

it is possible to improve the advertising effect according as

the priority degree. Incidentally, as shown in Fig. 4, it is

also applicable that each of the prints is perforated at a

line between image G1 and specific information G3 to cut them
each other.

Incidentally, when determining the priority degree or
the order, although it is applicable that the operator
manually inputs the priority degree, etc., it is also
possible that the priority degrees, etc. are automatically
determined, for instance, corresponding to fluctuation in
advertising fees, by performing a predetermined program in
the computer. When a number of advertisements is excessively
large, however, sometimes it may be impossible to determine
the priority degree. In this case, it is applicable that a
plurality of specific information sets, such as
advertisements, etc., are stored in specific information
memorizing section 272 (computer) in advance, and advertising
information sets, being different each other, are recorded
onto the consecutive prints, on which captured images are
also recorded, by randomly extracting an arbitral
advertisement, irrespective of the priority and the images
captured by the customer, based on random numbers generated
by specific information memorizing section 272.

Although the present invention has been described in
reference to EMBODIMENT 1 in the above, the scope of the
present invention is not limited to that of EMBODIMENT 1.
Needless to say that disclosed EMBODIMENT 1 can be varied by

a skilled person without departing from the spirit and scope of the present invention.

According to EMBODIMENT 1, it becomes possible to provide a printing system, a printing method and an image-forming apparatus, which make it possible to efficiently utilize an image-forming medium and to form an image having a high appealing capability.

[EMBODIMENT 2]

Next, EMBODIMENT 2 of the present invention will be detailed in the following. However, the description duplicating with that of EMBODIMENT 1 will be omitted for simplicity.

In EMBODIMENT 2, at least one of specific information image data, for setting a background image and a synthesizing region, and data, having a number corresponding to said specific information image data, are stored in specific information memorizing section 272 in advance. The predetermined specific information image data set is specified from a plurality of specific information image data sets, stored in advance in specific information memorizing section 272, by the operating actions of the operator or based on the number of the specific information image data set included in the print-order information. Then, the image data are generated by synthesizing the specific information

image data selected, and the prints are produced based on the synthesized image data.

As for the memorizing operation of the specific information image data, it is applicable that a plurality of specific information image data sets are downloaded into the specific information memorizing section in advance by accessing server 30, in which specific information image data sets are stored, through communication device 240, or it is also applicable that, when printing, only desirable specific information image data sets are downloaded to produce prints after the synthesizing operation of them.

In control section 207, top and bottom information and background color information, in respect to the image data obtained from information-inputting device 212, are detected, and a layout and color of specific information image data is determined based on the detected information to produce the synthesized prints.

Further, control section 207 comprises image processor 270, in which image data utilized for the exposing process are generated by processing the inputted image data, and are transmitted to exposure processing section 204 wherein the images are exposed on photosensitive materials. The exposed photosensitive materials are sent to print-producing section

205 to produce the prints through the processes of developing

and then drying them.

Image reading device 230, for reading and transferring

the image data stored in removable media M, and communication

device 240, capable of communicating with print-receipt

device 10, are installed in image transferring section 214 of

print-outputting apparatus 20. Image reading device 230 can

reads the image data stored in removable media M currently

inserted into image transferring section 214 and can transfer

the image data to control section 207 including a micro-

computer. On the other hand, communication device 240 can

input the image data, etc. by communicating with print-

receipt device 10 through internet NT.

Print-outputting apparatus 20 can conducts normal

printing operation P1, specific information printing

operation P2 and index printing operation P3 based on the

image data stored in removable media M and the print-order

information stored corresponding to the image data.

Next, referring to Fig. 3(c), Fig. 3(d) and Fig. 3(e),

printing operations of print-outputting apparatus 20 of

EMBODIMENT 2 will be detailed in the following. Fig. 3(c),

Fig. 3(d) and Fig. 3(e) show an explanatory illustration for

explaining printing operations of print-outputting apparatus

20. Incidentally, print-outputting apparatus 20 can perform

the following printing operations based on the program stored in the in-house hard-disk, serving as a memory medium.

At first, the L print size is exemplified in the following explanation. Generally speaking, as shown in Fig. 3(c), the vertical and horizontal dimensions of the L print size are 89 mm and 127 mm, respectively. The abovementioned dimensions include border margins when employing bordered prints. Incidentally, it is assumed that the prints, on which advertising images, etc. are printed based on the specific information, in respect to the normal captured images, are produced in EMBODIMENT 2.

In the above case, when the image size based on the specific information is set at arbitral dimensions, the photographic paper should be changed according with the change of the dimensions. However, since the photosensitive material, which can be loaded into print-outputting apparatus 20, is longer in the longitudinal direction than the length of its width direction, the roll-type photosensitive material is accommodated. Incidentally, the roll-type photosensitive materials, having the width dimension of either 89 mm or 127 mm, have been generally employed for this application. Therefore, it has been a problem that employing photosensitive materials having other sizes considerably increase cost.

        Accordingly, for instance, in case that photosensitive

material A having a width dimension of 89 mm is loaded in

print-outputting apparatus 20 of EMBODIMENT 2, when control

section 207, serving both as a detecting device, an obtaining

device and a determining device, detects the width of the

loaded photosensitive material and also detects the print

size (in this case, the L print size) from the inputted

print-order information, control section 207 forms image G1

on photosensitive material A based on the captured image

information in such a manner that the vertical dimension of

image G1 fully occupies the width dimension of photosensitive

material A, as shown in Fig. 3(d), and then, successively

forms image G2 based on the specific information in the

longitudinal direction of photosensitive material A.

Therefore, it becomes possible to effectively utilize almost

all of photosensitive material A of the roll-type without

generating cutting-out portions to be abandoned for forming

image G2. Incidentally, although it is desirable that the

vertical length of image G2, based on the specific

information, coincides with the vertical dimension of image

G1 to maintain conformity of both dimensions, it is possible

to arbitrarily determine the lateral length of image G2

irrespective to the size of image G1.

On the contrary, in case that photosensitive material B having a width dimension of 127 mm is loaded in print-outputting apparatus 20 of EMBODIMENT 2, control section 207 forms image G1 on photosensitive material B based on the captured image information in such a manner that the lateral dimension of image G1 fully occupies the width dimension of photosensitive material B, as shown in Fig. 3(e), and then, successively forms image G2' based on the specific information in the longitudinal direction of photosensitive material B. Therefore, it becomes possible to effectively utilize almost all of photosensitive material B of the roll-type without generating cutting-out portions to be abandoned for forming image G2'. Incidentally, although it is desirable that the lateral length of image G2', based on the specific information, coincides with the lateral dimension of image G1 to maintain conformity of both dimensions, it is possible to arbitrarily determine the vertical length of image G2' irrespective to the size of image G1.

In the abovementioned example, although image G2 or G2' is formed in successive to image G1 in respect to the pulling-out direction of roll-type photosensitive material A or B, it is also possible to reversely arrange them.

Incidentally, advertising images, etc., based on the specific information, sometimes include images having top and

bottom direction, such as a human face, a letter, etc. When randomly forming those images, there is a fear that an unnatural image would be formed due to a lack of conformity with image G1, based on the captured image information, in its top and bottom direction.

On the other hand, when capturing images with a camera, it is possible that the camera reads and inputs the top and bottom information of each image, and it is also possible that the operator inputs the top and bottom direction by viewing the image. When such the top and bottom information are inputted, control section 207, serving both as a detecting device and determining device, determines the direction of image G2 or G2', to be formed based on the specific information, so that the direction of image G2 or G2' corresponds to the direction of image G1 to be formed based on the captured image information. Therefore, when the customer views image G1 formed on the provided print, the customer can naturally recognize image G2 or G2', since the top and bottom direction of image G2 or G2' coincides with that of image G1. Thus, the appealing capability of images in regard to advertisement, etc. will be improved.

Concretely speaking, when the image based on the specific information includes letters of "PATENT OFFICE", it is necessary that the top and bottom direction of each letter

and the arrangement of letters should coincide with those of

image G1. Accordingly, in the sate shown in Fig. 3(d), the

letters of "PATENT OFFICE" should be written vertically,

while in the sate shown in Fig. 3(e), the letters of "PATENT

OFFICE" should be written laterally. For this purpose,

control section 207 performs such an image-processing that

each letter is rotated at 90° in a right direction and the

gap between adjacent letters is appropriately widened.

Incidentally, it is desirable that control section 207

has a function of recognizing a leading edge of row of

letters. This is because, when the letters are written

vertically, it is possible to arrange the leading edge of the

row at the left end, while, when the letters are written

laterally, it is possible to arrange the leading edge of the

row at the upper side. Thus, the viewer of the prints can

easily read the row of letters.

Further, control section 207, serving both as a

detecting device and a determining device, can enforce an

appealing capability of the image to be formed based on the

specific information by detecting the background color of the

image to be formed based on the captured image information

and by appropriately determining the background color of the

image to be formed based on the specific information,

corresponding to the detected background color. Namely, when

the background color of the specific image is selected as a

complementary color (for instance, an orange color) of the

background color (for instance, an green color) of the

captured image, it is possible to strongly stress the

contrast between the captured image and the specific image,

while, when the background color of the specific image is

similar to the background color of the captured image, it is

possible to display the specific image with a natural

feeling.

As well as the above, control section 207, serving both

as a detecting device and a determining device, can enforce

an appealing capability of the image to be formed based on

the specific information by detecting the color of the image,

to be formed based on the captured image information and

located near the image to be formed based on the specific

information, and by appropriately determining the background

color of the image to be formed based on the specific

information, corresponding to the detected color.

Fig. 4 shows a perspective view of a photographic

paper, being an example of image forming media printed by

print-outputting apparatus 20. As shown in Fig. 4, both

image G1 to be formed based on the captured image information

and image G3 to be formed based on the specific image

information are printed on photographic paper P. In this

application, image G3 can be used for discount tickets. It

is difficult, however, to cut off a portion of image G3

without using a cutting device such as a pair of scissors,

etc., since the photographic paper is made of a comparatively

thick paper.

Accordingly, in EMBODIMENT 2 of the present invention,

perforated line TL is formed between image G1 and image G3 so

that at least a part of the area, on which image G3 is formed

based on the specific information, can be separated from the

area, on which image G1 is formed based on the captured image

information, without using a cutting device. Therefore, it

is conveniently possible for the customer to use discount

tickets (or coupon tickets, etc.) by easily cutting off only

them from the photographic paper by hand. Incidentally, the

method for cutting off the portion of image G3 is not limited

to the perforated line mentioned above. It is also

applicable that image G3 is formed on a seal, which can be

easily peeled off, and the customer peel off the seal when

using it.

Although the present invention has been described in

reference to EMBODIMENT 2 in the above, the scope of the

present invention is not limited to that of EMBODIMENT 2.

Needless to say that disclosed EMBODIMENT 2 can be varied by

a skilled person without departing from the spirit and scope

of the present invention.

According to EMBODIMENT 2, it becomes possible to

provide a printing system, a printing method and an image-

forming apparatus, which make it possible to efficiently

utilize an image-forming medium and to form an image having a

high appealing capability.

[EMBODIMENT 3]

Next, with regard to EMBODIMENT 1, the method for

reducing the payment of the customer will be detailed in the

following.

Fig. 5 shows a conceptual block-diagram of EMBODIMENT

3. In Fig. 5, numeral 301 indicates a customer who orders

prints, numeral 302 indicates a mini-lab., which produces the

prints, and numeral 303 indicates a sponsor of

advertisement. It is assumed that, for instance, sponsor 303

should pay 20 yen per one print to mini-lab. 302 for a cost

of printing advertising images onto every prints in advance.

In EMBODIMENT 3, mini-lab. 302 constitutes the print-service

system.

As a result of the abovementioned assumption, mini-lab.

302 directly delivers or sends the prints with the

advertising images to customer 301 in response to the print

order issued by customer 301. In print 304 of EMBODIMENT 3,

numeral 304a indicates an advertising region and numeral 304b

indicates an image region. Since customer 301 receives the

prints on which advertising images are printed, the sponsor's

payment for the advertising images reduces the cost of the

prints to, for instance, 30 yen per one print (shown by the

solid line in Fig. 5), which is cheaper than the normal price

of 50 yen per one print without the advertising image (shown

by the broken line in Fig. 5). Namely, it is possible for

mini-lab 302 to reduce the price of the print-service for

customer 301 from normal price of 50 yen per one print to 30

yen per one print, since the cost of 20 yen per one print for

printing the advertisement can be charged to sponsor 303.

Therefore, it becomes possible to reduce the price of the

print-service for the customer, to the extent that the

advertising images are printed.

Fig. 6 shows a block diagram of a configuration of a

mini-lab (a print-service system). In Fig. 6, the same

reference number indicates the same block as that in Fig. 5.

Numeral 310 indicates an image data inputting section to

input image data given by customer 301, and numeral 311

indicates an advertising data inputting section to input

advertising data given by sponsor 303. Numeral 312 indicates

a control section to conduct controlling actions for storing

data, received from image data inputting section 310 and/or

advertising data inputting section 311, into storing section

313 and to conduct other kinds of controlling actions.

Numeral 313 indicates a storing section, coupled to

control section 312, to store the image data and other kinds

of data, and numeral 314 indicates a displaying section,

coupled to control section 312, to display various kinds of

information. Numeral 315 indicates an advertising data

adding section to add the advertising data, inputted from

advertising data inputting section 311, to the image data

inputted from image data inputting section 310. Numeral 316

indicates a customer data inputting section to input customer

data (such as name, address, sex, etc.) and to feed them to

control section 312. Numeral 317 indicates a printer to

produce prints with the advertising images. Printer 317

outputs print 304 on which an advertising image is added.

Numeral 304a indicates an advertising region of print

304, and, for instance, an advertising message of "Konica

Camera Shop" is printed onto advertising region 304a.

Numeral 304b indicates an image region in which an image

captured by customer 301 is printed. Image data inputting

section 310, advertising data inputting section 311, control

section 312, storing section 313, displaying section 314,

advertising data adding section 315 and printer 317,

described in the above, are equipped in mini-lab 302. The

operations of the system, having the abovementioned
configuration, will be detailed in the following.

In EMBODIMENT 3, it is assumed that a contract in
respect to the photographic advertisement has been concluded
between sponsor 303 and mini-lab 302. In the contract, for
instance, kinds of advertisements, an advertising period of
time, a cost for the advertising service, etc. are
determined, and the contents of the advertisement are also
determined corresponding to customer's data, such as name,
address, sex, etc. Sponsor 303 can change the contents of
the advertisement corresponding to the age, the residential
area (address), sex, etc. of customer 301. The contents of
the contract, determined by the abovementioned procedure, are
stored in storing section 313 in advance, and sponsor 303
should pay the advertising fee in accordance with the
contents of the contract.

Next, advertising data having contents contracted with
sponsor 303 are inputted into mini-lab 302 from advertising
data inputting section 311. At this time, the advertising
data are not limited to a single kind of advertisement, but
plural kinds of advertisement would be acceptable. Control
section 312 stores the advertising data, inputted into mini-
lab 302, in storing section 313.

Next, image data sent from customer 301 are inputted into mini-lab 302 from image data inputting section 310 and fed to control section 312, which temporarily stores the image data, inputted into mini-lab 302, in storing section 313. Then, control section 312 displays a menu Table for corresponding the image with the advertisement on the screen of displaying section 314, on which the advertising data in accordance with the contents of the contract are displayed.

Corresponding to the demand of customer 301, the operator selects a suitable advertisement out of a plurality of advertisements by clicking the mouse (not shown in the drawings). Then, control section 312 identifies the advertising data selected by the operator.

Control section 312 sequentially reads the image data of customer 301 stored in storing section 313 and outputs the image data to advertising data adding section 315. On the other hand, control section 312 also reads the advertising data stored in storing section 313 and outputs the advertising data to advertising data adding section 315. In advertising data adding section 315, an image-processing operation, for adding the advertising data to the image data inputted from control section 312, is conducted. The image-processing operation can be conducted by using the conventional image-processing technologies.

        The image data added with the advertising data, created

in advertising data adding section 315, is inputted into

printer 317 to deliver print 304. As shown in the drawing,

the advertising message of "Konica Camera Shop" is printed on

advertising region 304a, while the image captured by customer

301 is printed on image region 304b. Customer 301 receives

the print 304 via mail or by paying a visit to mini-lab 302,

and pays a print-service fee corresponding to the received

prints to mini-lab 302. Other than the cash payment, the

payment of this fee would be also achieved by using an

electronic money system in which the bill is automatically

charged to the bank account of customer 301.

        As described in the above, according to EMBODIMENT 3,

it becomes possible to produce prints having an advertisement

in the printed image.

        In EMBODIMENT 3, control section 312 has a function of

controlling a number of prints, namely, a number of prints is

stored into storing section 313 by control section 312 at

every time of the print producing operation. Then, control

section 312 requests sponsor 303 to pay the advertising fee

corresponding to the number of prints. Concretely speaking,

it is possible to send a bill printed by printer 317 to

sponsor 303, or it is also possible to display the

advertising fee on displaying section 314 so that sponsor 303

recognizes a sum of the advertising fee by viewing the

contents displayed on the screen. Accordingly, it becomes

possible to receive the advertising fee corresponding to the

number of prints from sponsor 303.

Fig. 7(a) and Fig. 7(b) show printing formats of the

print. Fig. 7(a) shows a first printing format, in which the

advertisement is overlapped with the captured image within

the standard image size. Fig. 7(b) shows a second printing

format, in which the advertisement is printed on an area

outside the standard image size without overlapping with the

captured image. In the first printing format, since

advertising region 304a is included in the area of the

standard image size, a part of the captured image are erased,

while, in the second printing format, since the advertisement

is printed on the area outside image region 304b without

overlapping with the captured image, the full size of the

captured image can be printed on the photographic paper

without erasing a part of the captured image.

It is possible to restore the size of the second

printing format to the standard image size by cutting off

advertising region 304a, if needed. According to EMBODIMENT

3, it is possible to print an advertisement on the standard

image size, and, when the size is larger than the standard

image size, it is also possible to restore the size of the

second printing format to the standard image size by cutting

off a portion of advertisement.

According to EMBODIMENT 3, it is possible to display

information, which designate contents of advertisement, and a

discount rate of the print for each of the information at the

time of the print-order. Fig. 8 shows an exemplified table

displayed on the screen of displaying section 314 at the time

of the print-order. In the table, contents of advertisement

are displayed corresponding to each discount rate. For

instance, as for the advertisement indicated in column A, the

discount rate is set at 10 yen per one print.

Further, as for the contents of the advertisement, it

is possible to display not only a row of letters as shown in

columns A, B of the table, but also an image, such as a

flower, etc., with letter information as shown in column C.

As a result, it becomes possible to notify the customer of

the contents of the advertisement as well as the discount

rate in advance.

Still further, according to EMBODIMENT 3, control

section 312 can change the contents of the advertisement

corresponding to the customer's information. For instance,

when sponsor 303 runs an electronic-appliance shop, people

living near the electronic-appliance shop are expected to be

customers who buy products sold by the electronic-appliance

shop. In such the case, when one of customers for the

electronic-appliance shop orders prints to mini-lab 302, it

is possible to print the advertisement of the electronic-

appliance shop on the prints provided for the customer.

Namely, control section 312 searches out the residential area

of the customer based on the address information of the

customers so as to print the advertisement of the electronic-

appliance shop stored in storing section 313. Then, the

advertising data of the electronic-appliance shop are added

to the image data of the customer in advertising data adding

section 315. As a result, printer 317 delivers print 304 on

which the advertisement of the electronic-appliance shop is

printed.

Incidentally, data of age, sex, etc. are also employed

as the customer's information. In addition, when the

customer is female, it is possible to print the advertisement

of cosmetics.

Although the operations of EMBODIMENT 3 shown in Fig. 5

have been described in the above, EMBODIMENT 3 is also

applicable for a network system. Fig. 9 shows a block

diagram of a network system, being another example of

EMBODIMENT 3. Although the Internet is exemplified as the

network system shown in Fig. 9, the scope of the network

system is not limited to the Internet. Needless to say that

other type of network also can be employed. In Fig. 9,

numeral 320 indicates a server, and a plurality of servers

are coupled relative to each other through communication line

340. For instance, a Web server is employed for server 320.

Numeral 321 indicates a memory device, coupled to server 320,

for memorizing image data of advertising designs requested by

the sponsor and corresponding data for discounting the price.

Numeral 351 indicates a customer terminal device, which

is coupled to server 320 through communication line 340.

Numeral 330 indicates a print-service system, which is

installed in the mini-lab, etc. as shown in Fig. 6 and also

coupled to server 320 through communication line 340.

Numeral 352 indicates a sponsor terminal device, which is

also coupled to server 320 through communication line 340.

Although customer terminal device 351, print-service system

330 and sponsor terminal device 352 are coupled to the same

server in the exemplified system shown in Fig. 9, the scope

of the present invention is not limited to the above example.

It is also applicable that each of them is independently

coupled to server 320, being different relative to each

other. In the system shown in Fig. 9, TCP/IP (a

communication protocol for Internet) is employed for

conducting communication between the blocks relative to each

other. The operations of the abovementioned system will be
detailed in the following.

Sponsor terminal device 352 transmits image data of
advertising designs and corresponding data for discounting
the price by accessing server 320. In server 320, the image
data of advertising designs and corresponding data for
discounting the price, transmitted from sponsor terminal
device 352, are stored in memory device 321.

After the image data of advertising designs and
corresponding data for discounting the price are stored in
memory device 321, customer terminal device 351 can recognize
the image data of advertising designs the price by accessing
server 320.

The customer, who already confirms the contents of
advertisement of the sponsor and the discount rate, accesses
server 320 to order prints. Next, the customer designates
the advertising data to be printed on the prints from
customer terminal device 351, and then, transmits the image
data to server 320.

Server 320 transmits the image data and the advertising
data to be printed on the prints to print-service system 330.
In print-service system 330, the advertising data is added to
the image data to produce the prints. The finished
photographic prints are sent to the customer from the site of

print-service system 330, for instance, via mail. The

customer, who receives the photographic prints sent via mail,

pays the printing fee to the site of print-service system 330

corresponding to the contents of the bill enclosed with the

prints. The methods of paying the printing fee to the site

of print-service system 330 may include such methods as

paying by cash, paying into the bank account, being charged

to the customer's bank account, etc.

Although the mini-lab. is exemplified as the print-

service system in the abovementioned embodiment, the scope of

the present invention is not limited to the mini-lab. For

instance, a large-sized laboratory is also applicable for the

print-service system mentioned above.

Disclosed embodiment can be varied by a skilled person

without departing from the spirit and scope of the invention.